

Appendix C: Conformity Determination.

As adopted.

Air Quality Conformity Determination

Between

The **2040 Comprehensive Regional Plan, as amended**

The **Fiscal Year 2014 to 2017 Transportation Improvement Program, as amended**

and

The **Indiana State Implementation Plan for Air Quality**

July 18, 2013

**Northwestern Indiana Regional Planning Commission
Portage, Indiana**

www.nirpc.org

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Purpose

The purpose of this report is to document compliance with section 176(c) of the Clean Air Act as amended (CAAA), and the related requirements of the Final Transportation Conformity Rule (40 CFR Part 51 and 40 CFR Part 93). The air quality conformity determination establishes the compatibility between the state implementation plan, the regional transportation plan and transportation improvement program. The transportation plan includes the region's guide for transportation system development over a twenty-year period. The transportation improvement program (TIP) includes the region's choices for Federal spending on expansion and preservation of the transportation system over a four to five year period. The State Implementation Plan (SIP) includes strategies for attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The conformity determination is based on a regional emissions analysis that demonstrates compatibility among these three planning documents. The regional emissions analysis uses the region's transportation network model and the USEPA's MOVES emissions simulator to quantify the emissions from all vehicles on the future transportation system. For Lake and Porter Counties, annual emissions of fine particles and nitrogen oxides and Summer day emissions of Volatile Organic Compounds and Nitrogen Oxides must not exceed Motor Vehicle Emission Budgets established in the State Implementation Plan. The system that was analyzed includes all regionally significant capacity expansion projects in the Lake, Porter and LaPorte County area, and significant projects in northeastern Illinois, regardless of the funding sources.

Applicability

Action Applicability

This conformity determination is required for: adoption, acceptance, approval or support of the Regional Transportation Plan and the Transportation Improvement Program developed pursuant to 23 CFR Part 450 and 49 CFR Part 613.

Geographic Applicability

This conformity determination is required in the ozone area, including the Lake/Porter County non-attainment area with respect to the Summer day mobile-source emissions of VOCs and NO_x. Lake and Porter Counties are designated as non-attainment of the 2008 National Ambient Air Quality Standard (NAAQS) for "8-hour" ozone.

This conformity determination is required in the PM_{2.5} area, with respect to annual mobile source emissions of NO_x and direct PM_{2.5}. Lake and Porter Counties in Northwestern Indiana are classified as maintenance of the 1997 annual National Ambient Air Quality Standard (NAAQS) for PM_{2.5}.

This conformity determination is based on the requirement of Section 93.118 of the Conformity Rule for the regional emissions analysis to indicate compliance with the emissions budgets established in the State Implementation Plan for VOC and NO_x emissions in Lake and Porter Counties. The regional transportation plan and transportation improvement program must not result in Summer day emissions of VOC and NO_x in 2015, 2020, 2025, 2030 and 2040 in excess of the applicable budgets.

Priority

Transportation Control Measures (TCM) in the State Implementation Plan must be given funding priority in the FHWA/FTA approval of any action with air quality consequences. The State Implementation Plan for Lake and Porter Counties and for LaPorte County includes no transportation control measures. This conformity determination is not required to demonstrate priority for TCMs.

Consultation

This conformity determination has been conducted with the involvement of the United States Department of Transportation (USDOT) through the Federal Highway Administration Indiana Division (FHWA) and Federal Transit Administration Region 5 (FTA), United States Environmental Protection Agency Region 5 (USEPA), Indiana Department of Transportation (INDOT), Illinois Department of Transportation (IDOT), Indiana Department of Environmental Management (IDEM), Chicago Metropolitan Agency for Planning (CMAP) and Northwestern Indiana Regional Planning Commission (NIRPC).

The consultation process included the issues and procedures that are listed in section 93.105 of the final conformity rule and the August 2007 Interagency Consultation Guidance.

A consultation meeting was conducted on April 29, 2013. The meeting was attended by Bill Brown and Gary Evers at NIRPC, Frank Baukert, Jerry Halperin, Julie Ritzler and Lisa Shrader at INDOT, Larry Heil and Joyce Newland at FHWA, Tony Maietta at USEPA, and Shawn Seals at IDEM. The agenda included a discussion of the schedule for the completion of the conformity determination. The consultation group agreed that the comment period could extend beyond the date of the June meeting of the Transportation Policy Committee, with public comments and responses provided directly to the Commission. Given the need to determine conformity by July 20, the decision was made to go ahead with two versions of the T.I.P. for public comments: and exempt program without any capacity expansion projects, and a full program with all projects. The draft motor vehicle emissions budgets were presented and their status was discussed. The budget SIP documents were rewritten by USEPA staff to reduce costs. Publication in the Federal Register should happen very soon. The analysis years were discussed. They are 2015, 2020, 2025, 2030 and 2040. The logistics of the analysis were discussed. The NIRPC transportation network model will be used by NIRPC staff to provide the transportation inputs to the analysis. The INDOT TransCAD post-processor will be used, emission factors will be applied and emissions will be summed by INDOT staff, as was done with the development of the motor vehicle emissions budgets. The emissions factors had previously been provided by INDOT, using the MOVES model. The projects for the analysis were discussed. The group agreed to go forward with the "no-bridge" scenario for the Cline Avenue bridge in East Chicago, since the old bridge has been demolished, and no notifications have been provided regarding the construction of a new bridge, including design scope and tolling parameters. The Main Street added travel lanes project at the Muster/Dyer border will be included. The LaPorte Economic Development Corridor project will continue to be included in the network, though emissions analysis is not required for LaPorte County, due to its NAAQS attainment status. The routes of the Regional Bus Authority have been eliminated from the model, due to the cessation of service by that provider. A consultation meeting was conducted on May 16, 2013. The meeting was attended by Bill Brown and Gary Evers at NIRPC, Frank Baukert, Jerry Halperin, Julie Ritzler and Lisa Shrader at INDOT, Joyce Newland at FHWA, Tony Maietta at USEPA, and Shawn Seals at IDEM. The meeting included a discussion of the status of the conformity analysis. The analysis was not complete at the time of the call. The schedule of the final approval of the motor vehicle emissions budgets was discussed. The MOVES-based budgets were published in the Federal Register, starting a public comment period that ended on June 14. There were no negative comments to the EPA by June 14, and as such the budgets went into effect on July 15. The conformity action by the NIRPC board would take place on July 18, two days before the conformity deadline. The reviewing agencies agreed to conduct the review of the conformity determination during the public comment period. The discussion of the schedule led to a decision to move the comment period to begin on June 11 and end on July 11. There would be two versions of the new TIP provided for public comment: an exempt TIP that excludes all capacity expansion projects and a full TIP that includes them. The exempt version would be accompanied by a description of the temporary removal of all capacity expansion projects from the 2040 Comprehensive Regional Plan. The full version would be accompanied by an update of the capacity expansion projects on pages II-29, II-29 and II-95 in the plan. The meeting also included a discussion about one project that was included in the analysis, where the project scope remains uncertain. If the project turns out to be a resurface of the road, the project would be exempt. In that case, the conformity analysis would need to be

re-started to remove the project. INDOT LaPorte District staff would check on the project scope as soon as possible. The next meeting was scheduled for June 6.

A consultation meeting was conducted on June 6, 2013. The meeting was attended by Bill Brown of NIRPC, Greg Katter, Julie Ritzler and Lisa Shrader of INDOT, Joyce Newland at FHWA, Tony Maietta at USEPA, and Shawn Seals at IDEM. The meeting included a discussion of the status of the conformity analysis. The analysis was not complete at the time of the call. The TransCAD post-processor has not been working properly since the update to TransCAD version 6. INDOT staff is working with the software vendor to resolve the issue. Completion is anticipated around June 14. The Transportation Improvement Program will proceed to public comments with only the exempt project version, leaving the non-exempt projects to be added by an amendment. The meeting also included a discussion about the request for inclusion in the TIP of Federal funds for preliminary engineering for the proposed Illiana facility. The nature of the work would determine if the action could proceed immediately, or if it would have to wait for a second amendment of the plan and program, supported by a new conformity analysis. INDOT staff will contact Jim Earl for details about the funding request. The meeting included a discussion about the status of the proposed motor vehicle emissions budgets. So far, no comments have been received. The next meeting will be scheduled as soon as the emissions analysis for this conformity determination has been completed.

Public consultation

In compliance with the adopted NIRPC Public Participation Plan, an opportunity for public comment on the proposed conformity determination has been provided. A media release was issued on June 28, 2013 that established a comment period extending from the June 28 to July 28. This proposed conformity determination was made available to the public for review at the NIRPC offices, 6100 Southport Road, Portage and on the web at www.nirpc.org. *The comments and responses will be inserted here at the end of the public comment period.*

Content of the Transportation Plan

The transportation plan specifically describes the transportation system envisioned for the following horizon years: 2015, 2020, 2025, 2030 and 2040. These horizon years meet the requirements of Section 93.106 (a)(1) of the conformity rule.

The comprehensive regional plan quantifies and documents the demographic and employment factors influencing expected transportation demand. The future levels of population, households and employment imply the magnitude of development envisioned for each traffic analysis zone. These forecasts are based on the 2040 Growth and Revitalization Vision adopted by NIRPC on October 28, 2010.

The highway and transit systems are described in terms of the regionally significant additions or modifications to the existing transportation network, which the transportation plan envisions to be operational in the analysis years. The capacity-expansion projects in the 2040 Regional Transportation Plan are listed on Table 1.

Additions and modifications to the highway network are sufficiently identified to indicate intersections with existing regionally significant facilities, and to determine their effect on route options between transportation analysis zones. Each added or modified highway segment is sufficiently identified in terms of its design concept and design scope to allow modeling of travel times under various traffic volumes, consistent with the modeling methods for area-wide transportation analysis in use by NIRPC. The NIRPC transportation model includes network links representing road segments for all collector and higher functional classifications, with nodes representing all significant intersections.

Transit facilities, equipment, and services envisioned for the future are identified in terms of design concept. The design scope and operating policies for these transit projects have been assumed for the regional emissions analysis, based on local transit services. The NIRPC transportation model includes a mode choice model, and the transportation model is used to estimate transit ridership from the implementation of future transit facilities, equipment and services. Table 1 lists the projects, beginning with projects proposed for completion since 2010.

Table 1. 2040 Comprehensive Regional Plan Capacity Expansion Projects in the Regional Emissions Analysis
2015 Network (includes the existing plus committed network, plus the following projects)

ID	Agency	Town of Porter	Completion before	2015
243	Road	SR-49	Concept	Minor Arterial Street
	From	Oak Hill Road	Scope	Travel Lane Elimination
	To	NICTD Bridge	Model Representation	Remove 1 SB travel lane

ID	Agency	IDOT	Completion before	2015
232	Road	I-80	Concept	Interstate Highway
	From	US-30	Scope	Added travel Lanes
	To	US-45	Model Representation	Add 1 lane in each direction

ID	Agency	INDOT	Completion before	2015
121	Road	SR-2	Concept	Principal Arterial Highway
	From	one half mile West of I-65	Scope	Added Travel Lanes
	To	one half mile East of I-65	Model Representation	Add 1 travel lane in each direction

ID	Agency	INDOT	Completion before	2015
29	Road	SR-49	Concept	Principal Arterial Highway Interchange
	From	one half mile N. of CR-400N	Scope	New Interchange to Replace At-grade Intersection
	To	one half mile S. of CR-400N	Model Representation	New links, 1 travel lane in each direction, ramp attributes

2020 Network

(includes the 2015 network, plus the following projects)

ID	Agency	Lake County	Completion before	2020
235	Road	45 th Avenue	Concept	Minor Arterial Street
	From	Colfax Street	Scope	Added Center Turn Lane
	To	Cleveland Street	Model Representation	Increase capacity by 10%

ID	Agency	Merrillville	Completion before	2020
105	Road	Mississippi Street	Concept	Minor Arterial Street
	From	US-30	Scope	Added Travel Lanes
	To	101st Avenue	Model Representation	Add 1 travel lane in each direction

(Table 1. 2020 Network Continued)

ID	Agency	Munster	Completion before	2020
217	Road	45 th Avenue	Concept	Minor Arterial Street
	From	At Calumet Avenue	Scope	Intersection Realignment
	To		Model Representation	Reconfigure intersection links
ID	Agency	Valparaiso	Completion before	2020
214	Road	Vale Park Road East	Concept	Minor Arterial Street
	From	Calumet Avenue	Scope	Added Travel Lanes
	To	Silhavy Road	Model Representation	Add 1 travel lane in each direction
ID	Agency	Schererville	Completion before	2020
96a	Road	Kennedy Avenue	Concept	Minor Arterial Street
	From	Junction Street	Scope	Added Travel Lanes
	To	US-30	Model Representation	Add 1 travel lane in each direction
ID	Agency	Gary	Completion before	2020
38b	Road	Buffington Access 3	Concept	Collector Road
	From	SR-912	Scope	Added Travel Lanes
	To	Casinos	Model Representation	Add one travel lane in each direction
ID	Agency	IDOT	Completion before	2020
236	Road	I-57	Concept	Interstate
	From	At I-294	Scope	New Interchange
	To		Model Representation	New links, ramp attributes
ID	Agency	Cedar Lake	Completion before	2020
241	Road	133 rd Avenue	Concept	Principal Arterial Street
	From	US-41	Scope	Added Center Turn Lane
	To	Industrial Drive	Model Representation	Increase capacity by 10%
ID	Agency	Gary	Completion before	2020
38a	Road	Buffington Access 2A-3	Concept	Collector Street
	From	SR-912	Scope	Added Travel Lanes
	To	Casinos	Model Representation	Add 1 lane in each direction
ID	Agency	Hobart	Completion before	2020
226	Road	61st Avenue	Concept	Minor Arterial Street
	From	Colorado Street	Scope	Added Center Turn Lane
	To	SR-51	Model Representation	Increase capacity by 10%
ID	Agency	St. John	Completion before	2020
218	Road	93 rd Avenue	Concept	Minor Arterial Street
	From	White Oak Avenue	Scope	Added Center Turn Lane
	To	US-41	Model Representation	Increase capacity by 10%

(Table 1. 2020 Network Continued)

ID	Agency	Schererville	Completion before	2020
96b	Road	Kennedy Avenue	Concept	Minor Arterial Street
	From	Main Street	Scope	Added Travel Lanes
	To	Oak Street	Model Representation	Add 1 travel lane in each direction

ID	Agency	Hammond	Completion before	2020
240	Road	Gostlin/Sheffield/Chicago	Concept	Minor Arterial Street
	From	Illinois State Line	Scope	Added Travel Lanes
	To	US-41	Model Representation	Add one travel lane in each direction

2025 Network (includes the 2020 network, plus the following projects)

ID	Agency	Merrillville	Completion before	2025
214	Road	101 st Avenue	Concept	Minor Arterial Highway
	From	SR-53	Scope	Added Travel Lanes
	To	Mississippi Street	Model Representation	Add one travel lane in each direction

ID	Agency	Munster	Completion before	2025
86	Road	Main Street	Concept	Minor Arterial Street
	From	Burnham Avenue	Scope	New Construction and added travel lanes
	To	Calumet Avenue	Model Representation	New links, 2 travel lanes in each direction, Minor Arterial attributes, add 1 lane / direction in existing segment

ID	Agency	Schererville	Completion before	2025
96c	Road	Kennedy Avenue	Concept	Minor Arterial Street
	From	Oak Street	Scope	Added Travel Lanes
	To	Junction Street	Model Representation	Add 1 travel lane in each direction

2030 Network (includes the 2025 network, plus the following project)

ID	Agency	Porter County	Completion before	2030
237	Road	Willowcreek Road	Concept	Minor Arterial Highway
	From	CR-700N	Scope	New Construction
	To	US-30	Model Representation	New links, 2 travel lanes in each direction, Minor Arterial attributes

2040 Network (includes the 2030 network, plus the following project)

ID	Agency	Valparaiso	Completion before	2040
239	Road	Division Road	Concept	Minor Arterial Street
	From	SR-2	Scope	Added Travel Lanes
	To	US-30	Model Representation	Add 1 travel lane in each direction

The NIRPC transportation modeling process does not include a land use model. The socioeconomic data for the traffic analysis zones reflect the 2040 Growth and Revitalization Vision for northwestern Indiana.

Relationship of Transportation Plan and TIP Conformity with the National Environmental Policy Act (NEPA) Process

The degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling do not preclude the consideration of alternatives in the NEPA process, including environmental assessment and preparation of environmental impact statements, or other project development studies. Should the NEPA process result in a project with design concept and scope significantly different from that in the transportation plan or transportation improvement program, the project must meet the tests for total annual system emissions equal to or below the level of the 2002 emissions or the applicable budgets for the analysis years, and provide for TCM priority, if applicable, before NEPA process completion.

During the congestion management system and other analyses for the capacity expansion projects in the 2040 Regional Transportation Plan, options other than the assumed design concept and design scope must be considered.

Fiscal Constraints for the Transportation Plan and TIP

The 2040 Regional Transportation Plan and Fiscal Year 2014 to 2017 Transportation Improvement Program are fiscally constrained consistent with DOT's metropolitan planning regulations in 23 CFR part 450. With the long term lease of the Indiana Toll Road, the Indiana Department of Transportation has achieved a funding mechanism, called Major Moves, to implement the projects in the statewide long range transportation plan.

Criteria and Procedures for the Conformity Determination

The Interagency Consultation Group Conformity Consultation Guidance establishes the criteria and procedures for the Conformity Determination. The Indiana SIP includes a duplicate of the original Federal transportation conformity rule. On August 15, 1997, after the establishment of the Indiana conformity rule as part of the SIP, the Federal conformity rule was amended to provide flexibility and streamlining. On June 1, 1998, the Indiana Department of Environmental Management issued a nonrule policy document that provides guidelines for conformity determination in light of Federal amendments. The nonrule policy document established the intent of IDEM to revise the SIP to mirror the new Federal amendments and to exercise its enforcement discretion to allow the features of the Federal amendments to be used.

The conformity determination for the 2040 Regional Transportation Plan and Fiscal Year 2014 to 2017 Transportation Improvement Program meets the requirements of sections 93.110 (latest planning assumptions), 93.111 (latest emissions model), and 93.112 (consultation) of the Federal conformity rule, for conformity determinations during all periods, and sections 93.113 (b and c) (transportation control measures), 93.118 (adherence to motor vehicle emissions budgets), and 93.119 (interim emissions reductions) of the conformity rule, for the transportation improvement program conformity determination with respect to Summer day VOC and NO_x emissions and the annual direct PM_{2.5} and NO_x emissions.

Latest Planning Assumptions

The conformity determination is based on the latest planning assumptions. The transportation model uses the assumptions derived from estimates of current and future population, households, employment, travel and congestion most recently developed by NIRPC and approved by NIRPC. The estimates include 2010 population estimates from the 2010 Census, and employment estimates from the Indiana Department of Workforce Development ES-202 file. Trip generation rates, trip length, mode choice and other model parameters are based

on a 1995 Household Travel Survey in Northwestern Indiana and compared to nationwide data. The 2007-2008 Household Travel Survey has not been incorporated into the trip generation rates for the transportation network model due to the lack of funding for the proposed model overhaul. The travel demand model was validated with respect to the year 2008 Highway Performance Monitoring System. The 2015, 2020, 2030 and 2040 population, household and employment forecasts were prepared in March, 2011 by NIRPC, using the latest available information.

Since the previous conformity determination, the transit operating policies (including fares and service levels) have changed. The Regional Bus Authority curtailed operations due to lack of funding. Three routes provided by the Gary Public Transportation Corporation have been discontinued. These services have been eliminated from the model. Changes are assumed in existing transit fares within northwest Indiana over time. The model represents tolls on the Indiana Toll Road by links that correspond to tollbooths with a fixed travel time, based on the toll amount. The toll increases have been reflected in the transportation networks.

Planning Assumptions

1. Population forecasts have been prepared by NIRPC. For the first time, NIRPC has been allowed to use forecasts that are not constrained by the county control totals, which have tended to underestimate growth in the region. The population numbers show a large increase in Porter County, and a slight increase in LaPorte County and Lake County. The population, households and employment data are allocated to the traffic analysis zones and are used in the regional emissions analysis. The totals for the three-county area are included in Table 2.

Table 2. Socioeconomic Totals

	Population	Households	Employment
2000	741,468	277,324	303,850
2010	755,677	287,854	314,733
2016	776,834	291,921	281,122
2020	801,957	301,589	292,380
2030	861,956	325,047	320,155
2040	938,683	426,678	353,315

2. The Highway Performance Monitoring System (HPMS) data provided the basis for an analysis of the growth in Vehicle-Miles of Travel. Based on this data, the actual annual rate of growth of travel can be determined. For the three-county area, the rates range from -.88% per year to 2.84% per year between 1993 and 2008. Over this period, the annual rate of growth is 0.98% per year.

Table 3. Vehicle-Miles of Travel
data from the Highway Performance Monitoring System (HPMS)

Year	VMT Estimate (HPMS)	Annual Rate of Growth Since 1993
1993	18,829,591	
1994	18,663,552	-0.88%
1995	19,847,112	2.67%
1996	19,842,716	1.76%
1997	21,058,741	2.84%
1998	21,638,065	2.82%

Table 3. Continued

1999	21,249,847	2.04%
2000	21,527,000	1.93%
2001	21,987,000	1.96%
2002	22,147,635	1.82%
2003	22,201,000	1.66%
2004	22,154,000	1.49%
2005	22,216,000	1.39%
2006	22,305,000	1.31%
2007	22,397,000	1.25%
2008	21,792,000	0.98%

3. Adjustment factors have been produced to relate the vehicle-miles of travel produced by the transportation network model to the Highway Performance Monitoring System estimates for 2008. Overall the model's estimate of VMT is approximately 4% higher than the HPMS. These adjustment factors have been applied to model-generated estimates on a link by link basis.

Table 4. Model Calibration (Year 2008)

Lake County			HPMSvmt	Model vmt	M/H
11	Urban	Interstate	3,566,000	3,570,560	1.00
12	Urban	Other Expressway	564,000	563,015	1.00
14	Urban	Principal Arterial	2,870,000	2,867,692	1.00
16	Urban	Minor Arterial	1,955,000	1,964,341	1.00
17	Urban	Collector	785,000	772,360	0.98
18	Urban	Local	2,182,000	2,174,895	1.00
1	Rural	Interstate	481,000	484,476	1.01
2	Rural	Principal Arterial	135,000	136,512	1.01
6	Rural	Minor Arterial	85,000	85,010	1.00
7	Rural	Major Collector	314,000	316,261	1.01
8	Rural	Minor Collector & Local	80,000	193,965	2.42
Porter County					
11	Urban	Interstate	1,118,000	1,114,514	1.00
14	Urban	Principal Arterial	1,232,000	1,233,414	1.00
16	Urban	Minor Arterial	436,000	440,380	1.01
17	Urban	Collector	205,000	205,021	1.00
18	Urban	Local	550,000	550,399	1.00
1	Rural	Interstate	144,000	446,582	3.10
2	Rural	Principal Arterial	180,000	192,123	1.07
6	Rural	Minor Arterial	143,000	145,355	1.02
7	Rural	Major Collector	644,000	681,285	1.06
8	Rural	Minor Collector & Local	167,000	305,186	1.83
LaPorte County					
11	Urban	Interstate	271,000	451,462	1.67

14	Urban	Principal Arterial	577,000	590,997	1.02
16	Urban	Minor Arterial	317,000	317,676	1.00
17	Urban	Collector	105,000	106,180	1.01
18	Urban	Local	300,000	296,267	0.99
1	Rural	Interstate	884,000	815,149	0.92
2	Rural	Principal Arterial	327,000	324,222	0.99
6	Rural	Minor Arterial	428,000	424,438	0.99
7	Rural	Major Collector	504,000	507,378	1.01
8	Rural	Minor Collector & Local	243,000	431,718	1.78
		TOTAL	21,792,000	22,708,830	1.04

4. Vehicle registration data have been received from the Indiana Bureau of Motor Vehicles. These data are split by vehicle type, and have an associated date of approximately January 1, 2009. The Indiana Department of Environmental Management provided vehicle age information for cars and light trucks, from the application of a vehicle identification number (VIN) decoder. This vehicle registration data have been used in MOVES, reflecting vehicle fleet age by vehicle type for smaller vehicles. For larger vehicle types, default data have been determined to be the best available fleet age information.
5. There have been recent changes to transit fares in northwest Indiana. The Gary Public Transportation Corporation and Northern Indiana Commuter Transportation District increased fares in 2010 and 2011.

Exempt Projects

The reconstruction and two-way left turn lane projects are now treated as nonexempt, with the network modified to represent such continuous two way left turn lane projects with a 10% increase in the per hour per lane capacity. Other exempt projects are listed in the Transportation Improvement Program.

Project Changes

Some of the local projects that were originally proposed have not made sufficient progress to achieve the originally planned 2015 network, and have been delayed and/or removed from the plan. Some of these projects are included in later year networks in the transportation network model used for the regional emissions analysis. The Cline Avenue Bridge (SR-912) over the Indiana Harbor Canal was closed to traffic in November, 2009 after serious structural deficiencies were found. The preferred alternative is the detour route on Dickey Road and Riley Road. These two collector roads would provide a short link on an expressway corridor. While the NEPA process is underway, INDOT is considering various options for the routing of this highway.

Horizon Year

The horizon year is 2040. The 2040 Comprehensive Regional Plan provides a policy-oriented distribution of population and households. This distribution is reflected in the project selection system for the plan, giving significant weight to projects in the revitalization areas in Gary, Hammond, East Chicago and Michigan City, as well as livable centers that provide for mixed land uses and greater transportation options.

The methods and assumptions for the transportation network model in the regional emissions analysis are included in The Transportation Model Documentation Report. KPMG, the consultants for the major investment study of the INDOT facilities in northwestern Indiana, concluded that the NIRPC model is in agreement with acceptable professional practice. The 2009 certification review concluded that the model meets or exceeds the standards of travel demand models in use at small and medium sized Metropolitan Planning Organizations (MPOs).

Latest Emissions Model

On March 2, 2010 the USEPA officially released the MOVES model, with a two year grace period. The Indiana Department of Transportation has provided a utility that prepares the output of a TransCAD model for use with MOVES. INDOT has also run the MOVES model and provided emissions factors to all metropolitan areas in the state for use in conformity analysis. The MOVES model has been used for this conformity analysis. The motor vehicle emissions budgets have been revised to use the MOVES emission rates.

TCM Implementation

The 2040 Regional Transportation Plan and Fiscal Year 2014 to 2017 Transportation Improvement Program are not required to provide for timely implementation of TCMs from the SIP, since the SIP currently contains no TCMs.

Consistency with the Motor Vehicle Emission Budgets in the SIP

The regional emissions analysis has estimated emissions of VOC and NO_x as ozone precursors. The regional emissions analysis includes estimates of emissions from the entire transportation system, including all regionally significant projects contained in the transportation plan and all other regionally significant highway and transit projects expected in the nonattainment area in the time frame of the transportation plan.

The emissions analysis methodology meets the requirements of Section 93.122(b) of the Federal Conformity Rule, for conformity determinations based on estimates of regional transportation-related emissions completed after January 1, 1997.

Implementation of the Lake and Porter County projects in the regional transportation plan results in motor vehicle emissions that are below the levels of the applicable Motor Vehicle Emissions Budgets, as shown in Table 5. This table also indicates that the implementation of the Lake and Porter County projects in the regional transportation plan result in motor vehicle emissions that are below the level of the proposed Motor Vehicle Emissions Budgets in the State Implementation Plan for the PM_{2.5} nonattainment area.

Emission Reductions in Areas Without Motor Vehicle Emissions Budgets

The establishment of Motor Vehicle Emission Budgets that cover ozone and fine particles and their precursor emissions eliminates the requirement to demonstrate emission reductions.

Procedures for Determining Regional Transportation-related Emissions

The regional emissions analysis for the transportation plan includes calculations of vehicle emissions at the aggregate level for the entire transportation system, including all regionally significant expansion projects expected in the nonattainment area. The analysis includes FHWA/FTA-funded projects proposed in the transportation plan, all Indiana Toll Road projects and all other regionally significant projects which are disclosed to NIRPC. Vehicle miles traveled (VMT) from projects which are not regionally significant are estimated in accordance with reasonable professional practice, using the regional travel demand model and the procedure for projects that are regionally significant.

The regional emissions analysis does not include any TCMs for emissions reduction credit. The regional emissions analysis does not include emissions reduction credit from projects, programs, activities, or control measures which require a regulatory action in order to be implemented.

Ambient temperatures used for the regional emissions analysis are consistent with those used to estimate the emissions in 2002. All other factors, for example the fraction of travel in a hot stabilized engine mode, are consistently applied.

Reasonable methods have been used to estimate nonattainment area VMT on off-network roadways within the urban

transportation planning area, and on roadways outside the urban transportation planning area. For 2015, 2020, 2025, 2030 and 2040, estimates of regional transportation-related emissions used to support the conformity determination have been made using a network-based travel model with travel calculations performed at the individual link level according to procedures and methods that are available and in practice and supported by current and available documentation (see [The Transportation Model Documentation Report](#)). Intrazonal VMT has been added to the link VMT on associated centroid connectors for the analysis. The travel characteristics were calculated separately for three vehicle classes: autos (light duty gasoline vehicles), non-heavy trucks (light duty gasoline trucks 1) and heavy trucks (heavy duty diesel vehicles) and separately for three time periods: morning peak, afternoon peak and off peak. Using factors provided from the Indiana Department of Environmental Management, the travel characteristics were split to represent 28 vehicle types, and the emissions were calculated using a Microsoft Excel spreadsheet. The participating agencies have discussed these modeling procedures and practices through the interagency consultation process.

The Network-based travel model has been validated against observed counts for a 2008 base year, which is not more than 10 years prior to the date of the conformity determination. Model forecasts have been analyzed for reasonableness and compared to historical trends and other factors, and the results have been documented (see [The Transportation Model Documentation Report](#)).

Land use, population, employment, and other network-based travel model assumptions have been documented based on the best available information. The scenario of land development and use is consistent with the future transportation system alternative for which emissions have been estimated. The distribution of employment and residences for the preferred transportation alternative are reasonable.

A capacity-sensitive assignment methodology has been used, and emissions estimates are based on a methodology, which differentiates between peak and off-peak link volumes and speeds, and uses speeds based on final assigned volumes, post-processed in the database. Zone-to-zone travel impedances used to distribute trips between origin and destination pairs are in reasonable agreement with the travel times that are estimated from final assigned traffic volumes, using a feed-back procedure iterated five times. These times have also been used for modeling mode splits. The network-based travel model is reasonably sensitive to changes in the time(s), cost(s), and other factors affecting travel choices. Reasonable methods in accordance with good practice have been used to estimate traffic speeds and delays in a manner that is sensitive to the estimated volume of travel on each roadway segment represented in the network-based travel model. Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled (VMT) are considered the primary measure of VMT within the portion of the nonattainment area and for the functional classes of roadways included in the nonattainment area. The model provides estimates of Vehicle-Miles of Travel that are approximately 4% higher than the HPMS. (See [The Transportation Model Documentation Report](#).)

Table 5. Regional Emissions Analysis Results

Year	2015	2020	2025	2030	2040
Ozone Emissions in US Tons per Day					
Lake and Porter Counties					
VOC Budgets	13.99	5.99	5.99	5.99	5.99
VOC Emissions	7.33	5.24	4.75	4.64	4.95
NO _x Budgets	47.26	16.69	16.69	16.69	16.69
NO _x Emissions	23.05	14.64	11.90	11.46	12.25
PM _{2.5} Emissions in US Tons per Year					
Lake and Porter Counties					
Direct PM Budgets	374.3	374.3	188.73	188.73	188.73
Direct PM Emissions	317.25	197.69	163.27	157.20	173.19
NO _x Precursor Budgets	10486.08	10486.08	5472.34	5472.34	5472.34
NO _x Precursor Emissions	8931.41	5767.22	4742.89	4589.06	4905.63

Conclusion

The Summer day on-road mobile source emissions of the precursors of ozone (VOC and NO_x) in Lake and Porter Counties that result from the implementation of the projects in the 2040 Regional Transportation Plan and the Fiscal Year 2014 to 2017 Transportation Improvement Program, as defined by the action scenarios for 2015, 2020, 2025, 2030 and 2040 are less than the Motor Vehicle Emission Budgets established in the Maintenance Plan included in the U.S. EPA approved State Implementation Plan for Lake and Porter Counties. The on-road mobile source emissions of annual direct PM_{2.5} and annual nitrogen oxide in the PM_{2.5} nonattainment area that result from the implementation of the projects in the 2040 Regional Transportation Plan and the Fiscal Year 2014 to 2017 Transportation Improvement Program as defined by the action scenarios for 2015, 2020, 2025, 2030 and 2040 are less than the Motor Vehicle Emission Budgets established in the Maintenance Plan included in the U.S. EPA approved State Implementation Plan for Lake and Porter Counties. Therefore, **the 2040 Regional Transportation Plan and the Fiscal Year 2014 to 2017 Transportation Improvement Program have been found to conform to the requirements of section 176(c) of the Clean Air Act Amendment and the related requirements of the Final Transportation Conformity Rule (40 CFR Part 51 and 40 CFR Part 93) with respect to ozone and PM_{2.5}.**